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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/454,941	12/02/1999	DAVID B. KIRK	1391P	4446

7590 03/09/2005  
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Two North Market Street  
Third Floor  
San Jose, CA 95113

EXAMINER

KIM, HAROLD J

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/454,941

Applicant(s)

KIRK, DAVID B.

Examiner

Harold Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### DETAILED ACTION

1. This Office Action is in response to the filing of the RCE with Amendment, Paper # 02012005, on 2/1/05. Applicant's arguments with respect to amended claims 1-28 have been considered but they are not persuasive.
2. Claims 1-28 are presented for examination.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3, 6, 9-13, 16-17, 20-21 and 25-26 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Dye, US Patent no. 6,173,381, in view of Davis et al., US Patent no. 4,991,169.**

5. In re claim 1, Dye shows a controller chip [fig 5] comprising:

an engine [202, 204, 206, 210, 212, 214, 216, 221, 222 fig 5] operative to manage a memory [110, fig 2], the engine comprising an interface [202, fig 5]; and

a storage element [230, fig 5] coupled to the engine, the storage element being accessible by a central processing unit (CPU) [120 in fig 2; HOST in fig 2] through the engine, wherein the engine receives commands from the CPU via the interface, and

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manages the storage element via the interface, and write the commands into the memory.

Dye does not show the engine incorporates the storage element as part of the memory. Davis et al. shows the storage section is part of the shared memory [col 4, lines 1-4]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the storage element as part of the memory as shown in Davis et al. for saving the cost of memory by utilizing system memory as the storage elements.

6. In re claim 2, Dye shows FIFO buffer [230, fig 5; stores instructions for the graphic engine, col 3, lines 10-13].

7. In re claims 3 and 6, Dye does show FIFO buffer [204, 206, 214, 216, fig 5]. Dye does not show circular buffer and the effective size of the FIFO buffer as view by the CPU can be as large as the memory. Davis et al show the circular buffer [col 4, lines 4] and the effective size of the FIFO buffer as view by the CPU can be as large as the memory [col 4, lines 1, "shared memory"]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the circular buffer and the effective size of the FIFO buffer as view by the CPU can be as large as the memory as shown in Davis et al. for saving the cost of memory.

8. In re claim 9, Dye shows a graphics controllers chip [212, fig 5].

9. In re claim 10, Dye shows a graphics engine [212, fig 5].

10. Claims 11-13, 16, 17, 20, 21, 25-26 are rejected under the same rationale as discussed above in claims 1-3, 6, 9, and 10.

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11. **Claims 4, 5, 7, 8, 14, 15, 18, 19, 22-24, 27, and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Dye, US Patent no. 6,173,381, in view of Davis et al., US Patent no. 4,991,169, as applied to claims 1, 2, 9, 10-12, 16-17, 20-21 and 25-26 above.**

12. In re claims 4, 5, 7 and 8, Dye does not explicitly show a circular FIFO buffer, a double buffer, a triple buffer, a checking mechanism. Official Notice is taken that both the concept and the advantages of providing for a circular FIFO buffer, a double buffer, a triple buffer, a checking mechanism are old and well known in the art. Therefore, it would have been obvious to the ordinary skilled person in the art at the time the invention was made to include the FIFO, circular FIFO buffer, double buffer, triple buffer, checking mechanism in Dye for more flexible device by allowing it to operate in multiple configurations and more reliable system by controlling and predicting data flow.

13. Claims 14-15, 18-19, 22-24, 27, and 28 are rejected under the same rationale as discussed above in claims 4, 5, 7 and 8.

### ***Response to Arguments***

Applicant's amendment with arguments, filed on 2/1/2005, has been fully considered but they are not persuasive.

In the remarks, applicants argued in substance that the amended-claimed invention does not show an engine comprising an interface, receiving commands from the CPU via the interface, and managing the storage element via the interface.

The rejection states as above that Dye shows "the engine" [202, 204, 206, 210, 212, 214, 216, 221, 222 fig 5] comprising "an interface" [202, fig 5]. In other words, the interface [202] is part of the engine [202, 204, 206, 210, 212, 214, 216, 221, 222 fig 5].

Dye also shows the engine receiving commands from the CPU [120 in fig 2; HOST in fig 5] via the interface [202 in fig 5].

Dye also shows the engine managing the storage element [230 in fig 5] via the interface [202 in fig 5].

In the remarks, applicants argued that bus interface logic [202] of Dye is physically separated from execution engine [210] by FIFO buffers [204 and 206].

Examiner disagreed. As stated above, the engine is comprising an interface [202], FIFO [204, 206, 214, 216], execution engine [210], graphics engine [212], and memory controllers [221, 222].

### ***Conclusion***

Applicant's arguments with respect to claims 1-28 have been considered but they are not persuasive. Accordingly, **THIS ACTION IS MADE NON-FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this action should be mailed to:

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

The centralized fax number is 703 872-9306.

The centralized hand carry paper drop off location is:

U.S. Patent and Trademark Office  
2011 South Clark Place  
Customer Window  
Crystal Plaza Two, Lobby, Room 1B03

Any inquiry of a general nature or relating to the status of this application should be directed to the technology center receptionist whose telephone number is (703) 306-5631.


Direct any inquiries concerning drawing review to the Drawing Review Branch (703) 305-8404.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harold Kim whose telephone numbers are 703-305-1948 (until 10/12/2004), and 571-272-4148 (after 10/12/2004). The examiner can normally be reached on Monday-Thursday 6AM-4PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Harold J. Kim  
Patent Examiner  
March 7, 2005/HK

  
KIM HUYNH  
PRIMARY EXAMINER  
3/7/05